

Title (en)

Particles comprising Al, Si and Mg in electro-conductive pastes and solar cell preparation

Title (de)

Partikel mit Al, Si und Mg in elektrisch leitenden Pasten und Solarzellenherstellung

Title (fr)

Particules comprenant de l'Al, Si, Mg dans des pâtes électroconductrices et préparation de cellules solaires

Publication

EP 2787510 A1 20141008 (EN)

Application

EP 13001677 A 20130402

Priority

EP 13001677 A 20130402

Abstract (en)

In general, the invention relates to electro-conductive pastes comprising particles with comprise Al, Si and Mg and their use in the preparation of photovoltaic solar cells, preferably n-type photovoltaic solar cells. More specifically, the invention relates to electro-conductive pastes, solar cell precursors, processes for preparation of solar cells, solar cells and solar modules. The invention relates to a paste comprising as paste constituents: a. At least 80 wt. % silver powder, based on the total weight of the paste; b. An inorganic reaction system; c. An organic vehicle; d. Additive particles comprising Al, Mg and Si as particle constituents, wherein Al, Mg and Si are present in the additive particles as elements or in one or more single phase mixtures of elements comprising one or more of the particle constituents, or a combination of one or more elements with one or more single phase mixtures of elements.

IPC 8 full level

H01B 1/22 (2006.01); **C03C 8/18** (2006.01); **H01L 31/0224** (2006.01)

CPC (source: EP US)

C03C 8/18 (2013.01 - EP US); **C09D 5/24** (2013.01 - US); **H01B 1/22** (2013.01 - EP US); **H01L 31/022425** (2013.01 - EP US); **H01L 31/068** (2013.01 - EP US); **H01L 31/1804** (2013.01 - EP US); **H01L 31/1864** (2013.01 - US); **Y02E 10/547** (2013.01 - EP US); **Y02P 70/50** (2015.11 - EP US)

Citation (applicant)

- EP 2472526 A2 20120704 - LG INNOTEK CO LTD [KR]
- "Handbook of Photovoltaic Science and Engineering", 2003, JOHN WILEY & SONS

Citation (search report)

- [X] WO 2013036510 A1 20130314 - FERRO CORP [US], et al
- [A] EP 0213762 A2 19870311 - CHOMERICS INC [US]

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2787510 A1 20141008; EP 2787510 B1 20180530; CN 105229751 A 20160106; CN 105229751 B 20170912; ES 2684721 T3 20181004; JP 2016519838 A 20160707; JP 6431041 B2 20181128; TW 201501136 A 20150101; TW I616898 B 20180301; US 2016049530 A1 20160218; WO 2014161641 A1 20141009

DOCDB simple family (application)

EP 13001677 A 20130402; CN 201480018718 A 20140326; EP 2014000810 W 20140326; ES 13001677 T 20130402; JP 2016505731 A 20140326; TW 103111607 A 20140328; US 201414779504 A 20140326